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## **NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WASTE MANAGEMENT SUPERFUND SECTION**

IN RE:            TARHEEL ARMY MISSILE PLANT            (TAMP)            CONSENT AGREEMENT  
                     NCD# NC7 210 020 544                            PURSUANT TO N.C.G.S. 130A-310.9(b)  
                     BURLINGTON, NORTH CAROLINA                            ALAMANCE COUNTY

The following constitutes the agreement between the United States Army (Army) and the North Carolina Department of Environment and Natural Resources, Division of Waste Management (Division). The Army concurs with the conclusions of law contained herein solely for purposes of this Consent Agreement.

### **I. JURISDICTION**

This Consent Agreement is entered into under authority vested in the Secretary of the North Carolina Department of Environment and Natural Resources (NCDENR) by North Carolina's Inactive Hazardous Response Act of 1987 (the Act), which constitutes Part 3, Article 9 of Chapter 130A of the North Carolina General Statutes (N.C.G.S. 130A-310, *et seq.*). The Secretary of the Department has delegated this authority to the Director of the North Carolina Division of Waste Management (Director).

This Consent Agreement is also entered into under authority vested in the Secretary of the Army by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Section 9600, *et seq.*; the Defense Environmental Restoration Program (DERP), 10 U.S.C. Section 2701, *et seq.*; and the National Contingency Plan (NCP), 40 C.F.R. Part 300, *et seq.*

### **II. STATEMENT OF PURPOSE**

This Consent Agreement is entered into for the purpose of addressing the inactive hazardous substance or waste disposal site (the Site) defined in Section III. A. and to provide the assurances required by CERCLA §120(h)(3)(C)(ii) in connection with the transfer desired by the Army of the principal property comprising the Site. In entering into this Consent Agreement, the objective of the Division and the Army is for the Army to implement a voluntary remedial action program approved by the Division which involves completion of the work to be performed set out in Section V.

### **III. STIPULATIONS OF FACT**

- A. The "Site" is the property located at 204 Graham-Hopedale Road, Burlington, North Carolina, as shown on the map in Exhibit A attached hereto, and any additional area that has become contaminated as a result of hazardous substances

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or waste disposed at that property. Since 1942, the United States of America has owned the property; it leased the property to private contractors from 1942 to 1992. Manufacturing activities conducted at the property have included, but were not limited to, tank rebuilding operations, manufacturing of commercial electronic devices, and other defense-related work.

- B. In 1988, Camp, Dresser, and McKee, at the behest of American Telephone and Telegraph (AT&T), which formerly manufactured electronic devices at the Site, conducted a Phase One Environmental Assessment at the Site. The purpose of this assessment was to evaluate the environmental conditions at the facility as a result of the use, storage, treatment and disposal of toxic and hazardous materials.
- C. In 1991, the U.S. Army Corps of Engineers, Savannah District, contracted with Black & Veatch Waste Science Technologies to prepare a Site Investigation Report (SIR). The investigation included the installation of three monitoring wells, the drilling of 12 soil borings, collection and analyses of groundwater, surface water, soil, and sediment samples. Additional samples were analyzed and collected from various aboveground tanks, underground storage tanks and air pollution control devices. In 1993, as part of the Addendum to the SIR, four soil borings were advanced and an additional monitoring well was installed. Samples collected during this phase were analyzed for volatile organic compounds, semi-volatile organics, pesticides, PCBs, and metals.
- D. In 1993, AT&T contracted with Roy F. Weston, Inc. to prepare a Comprehensive Site Assessment (CSA) in response to the March 1993 Notice of Violation (NOV) issued by the Department's Division of Environmental Management (now the Division of Water Quality (DWQ)). The NOV was issued due to petroleum contamination originating from an underground storage tank (UST) at the Site. The CSA also addressed contamination associated with a nearby waste accumulation pad (WAP).
- E. Soil sampling at the Site has revealed the presence of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), including aromatic and chlorinated VOCs, in excess of the standards contained in the Corrective Action Plan (CAP) referenced in Section III.G.
- F. Groundwater sampling at the Site has revealed the presence of VOCs and SVOCs, including aromatic and chlorinated VOCs, in excess of the applicable standards in Title 15A, Subchapter 2L of the North Carolina Administrative Code (15A NCAC 2L) which were also referenced in the CAP.
- G. In November 1994, a CAP was submitted to DWQ for review. The CAP proposed the installation of a soil vapor extraction/air sparging (SVE/AS) system to address the presence of volatile and semi-volatile organic compounds in the soil and groundwater. The SVE/AS system was installed in the fall of 1995, prior

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to the CAP approval. Analytical data to date show minimal decreases in concentration of chlorinated solvents in the soil and groundwater. Aromatic VOCs, however, are decreasing in concentration in the soil and groundwater.

- H. Pursuant to recognition of the potential for migration of contamination off the property, the CAP was modified in June 1998 (in the CAP Addendum) to include the installation of four (4) pumps (the P&T system) in existing monitoring wells in order to provide hydraulic gradient control of the plume in the northwest corner of the Site.
- I. The CAP and CAP Addendum were approved by the DWQ in October 1998. Activities required by the CAP and the CAP addendum are ongoing. These documents, together, constitute the remedial design documents for the soil and groundwater remedial action currently underway at the Site.
- J. Lucent Technologies, Inc. (Lucent), successor to AT&T, is currently operating the above-referenced soil vapor extraction/air sparging (SVE/AS) system (including 15 vapor extraction/ sparge wells) and a pump and treat system (including 4 groundwater extraction wells and an air stripper) at the Site.
- K. In August 2002, the Army and Division agreed to a Remedial Action Plan Outline (RAPO) setting forth additional remedial action to be taken by the Army with respect to chlorinated solvent contamination in the groundwater at the Site. The RAPO is attached hereto as Exhibit B and is referenced further in Section V below (Work To Be Performed).

## **IV. CONCLUSIONS OF LAW**

- A. The substances identified in Section III.E. and F. above are hazardous substances as defined in the Comprehensive Environmental Response, Compensation and Liability Act/Superfund Amendments and Reauthorization Act, 42 U.S.C. Section 9601, *et seq.*
- B. Disposal of hazardous substances referred to in the preceding paragraph has occurred at the Site within the meaning of N.C.G.S. 130A(3) pursuant to N.C.G.S. 130A-290(a)(6).
- C. The Site is an inactive hazardous substance or waste disposal site for purposes of the Act pursuant to N.C.G.S. 130A-310(3).
- D. The Army is an owner, operator, or other responsible party in relation to the Site within the meaning of N.C.G.S. 130A-310.9, pursuant to N.C.G.S. 130A-310(4), -310(5), -310(9) and -310.7.

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- E. This Consent Agreement is authorized pursuant to the power of the Secretary under N.C.G.S. 130A-310.9(b), and by delegation the Director, to enter into agreements with owners, operators, or other responsible parties for implementation of voluntary remedial action programs as to inactive hazardous substance or waste disposal sites.

### **V. WORK TO BE PERFORMED**

All work performed pursuant to plans approved under this Consent Agreement shall be under the direction and supervision of a professional engineer or a licensed geologist with expertise in hazardous substance site cleanup and comply with the current U.S. Environmental Protection Agency (EPA) Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual and the current Inactive Hazardous Sites Program Guidelines for Assessment and Cleanup. The remedy for this Site includes the completion of all components within Section V.

#### **A. Army Remedial Action Plan**

Within 90 days of the effective date of this Consent Agreement, the Army shall submit a remedial action plan (RAP) in accordance with Exhibit B.

1. The Army shall implement the RAP as approved by the Division, to the satisfaction of the Division. In making these determinations the Division shall ascertain the most nearly applicable cleanup standard as would be applied under CERCLA/SARA. However, State standards may exceed and be more comprehensive than such federal standards in accordance with N.C.G.S. 130A-310.3(d).
2. If the Division becomes convinced of the desirability of suspension or modification of the currently operating SVE/AS and P&T systems, the Division shall use its best efforts to secure DWQ assent to the appropriate action. In the event the Division and DWQ fail to reach agreement, the Division will elevate the matter to the appropriate NCDENR official for resolution.

#### **B. Land Use Restrictions/Plat**

1. The Division and the Army have agreed upon Land Use Restrictions (LURs) to be imposed on the subject property during the long-term cleanup process. The LURs are provided in Exhibit C. The purpose of these restrictions is to prevent human exposure to contaminated media. The Army is responsible for ensuring the enforcement of the LURs, as the LURs are part of the remedy. As long as LURs apply at the subject property, within one week of each anniversary of the date this

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Consent Agreement is entered into or other mutually agreed upon date, the Army will submit a LURs certification to the Division. This certification will confirm that the LURs are being complied with and remain recorded in their original form at the Alamance County Register of Deeds' office. The Army is authorized to delegate responsibility for the annual LUR certification to any future property owner with the Division's approval provided that the Army remains responsible for the effectiveness of the remedy and enforcement of the LURs.

2. Within thirty (30) days of the date on which this Consent Agreement is entered into, the Army shall submit, for the Division's written approval, a Declaration of Land Use Restrictions (DLUR) containing the LURs set out in Exhibit C and a survey plat that complies with N.C.G.S. 130A-310.8(a). Within ten (10) days after receipt of approval, the Army shall record the DLUR and survey in the Alamance County Register of Deeds' Office in accordance with N.C.G.S. 130A-310.8. Within one week after filing of the DLUR, the Army shall provide to the Division 1) a certified copy of the DLUR affixed with the seal of the Alamance County Register of Deeds' Office reflecting the book and page number where the DLUR is recorded and 2) a copy of the page in the grantor index where the DLUR is recorded. After the hazard has been eliminated, the Army or future property owner may request cancellation of the DLUR and the annual LUR certification in accordance with N.C.G.S. 130A-310.8(f).
3. When the Army believes all response action necessary to protect human health and the environment with respect to any substance remaining on the Site on the date of transfer of any property comprising the Site has been taken in accordance with 42 U.S.C. 9620(h)(3)(C)(iii), it may request written confirmation of same from the Division. The Division will provide a written determination on the Army's request in a timely fashion.

## **VI. MODIFICATION OF REMEDIAL ACTION**

If the Division determines that the RAP has not met its objectives within five (5) years of the date on which this Consent Agreement is entered into, then the Division will notify the Army in writing of any additional remediation required. Within ninety (90) days of receiving such written notice, the Army shall submit to the Division two (2) copies of a revised RAP addressing all deficiencies noted by the Division. The required components of the revised RAP are outlined in Exhibit D.

## **VII. SAMPLING, ACCESS, AND DATA/DOCUMENT AVAILABILITY**

- A. The Division or its representatives may take split or duplicate samples of any samples collected by the Army or its representatives pursuant to this Consent Agreement. The Army shall notify the Division not less than ten (10) days in advance of any field activity,

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including sampling. This notification may be given verbally in the field by the Army to the Division.

- B. The Division or its representatives may conduct any field activity they deem appropriate in relation to the Site. The Army may take split or duplicate samples of any samples collected by the Division during such field activity. The Division will notify the Army ten (10) days in advance of any sampling activities.
- C. While this Consent Agreement is in effect, Division personnel and their representatives may enter the Site consistent with N.C.G.S. 130A-17 or other applicable law and, while present, review the progress of activities required by this Consent Agreement; conduct such tests as the Division deems necessary; verify the data submitted to the Division by the Army; and otherwise assess the Army's compliance with this Consent Agreement.
- D. The Army will retain all records, files, photographs, operating logs, contracts, sampling and monitoring data, and other documents relating in any way to this Consent Agreement. These records may be inspected without notice by the Division personnel and their representatives during regular business hours. All parties with access to the Site pursuant to this paragraph shall comply with all approved health and safety plans.
- E. Unless a confidentiality claim covering information provided under this Consent Agreement is made pursuant to law and adequately substantiated when the information is submitted, such information may be made available to the public by the Division without further notice to the Army. The Army agrees that under no circumstances shall analytical data generated pursuant to this Consent Agreement be considered confidential.
- F. The Army and the Division waive any objections to the admissibility into evidence (but not objections as to the weight) of the results of any analyses of sampling conducted by or for the Army at the Site or of other data gathered pursuant to this Consent Agreement.

## **VIII. FUNDING**

- A. The Army will submit through its established budget channels to the Director of the Office of Management and Budget a request for funds, which will adequately support the required investigation and completion of all necessary response actions. Changes in the budget may occur as a result of approved changes in the schedule or the identification of unanticipated activities. Expenditure of funds by the Army for these corrective, remedial, or response actions is subject to Congressional authorizations and appropriation and apportionment to the Department of the Army. All correspondence regarding these corrective, remedial, or response actions will recite that they are being undertaken on property being transferred pursuant to CERCLA Section 120(h)(3)(C), and that once administratively reserved, the funding may not be withdrawn without the consent of the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health).

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- B. Notwithstanding the provision in Section VIII. A., any requirement of the payment or obligation of funds by the Army established by the terms of this Consent Agreement shall be subject to the availability of approved funds and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C Sec. 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the compliance schedule contained herein, which would require the payment or obligation of such funds, shall be adjusted. Failure to obtain adequate funds or appropriations from Congress does not release the Army from its ultimate obligation to comply with this Consent Agreement as expeditiously as possible.
- C. If funds are not approved as requested, the Army shall report the lack of funds to the Division within fourteen (14) days. The Army's notification shall include: (1) an explanation of the shortage of funds, (2) an evaluation of the priorities within the remaining work to be performed, (3) a discussion of the options, and (4) recommendation for modifications to the appropriate work plans. The Division shall approve or modify the Army's recommendation and notify the Army thereof. The Division approved recommendation shall be deemed an amendment to this Consent Agreement unless the Army invokes dispute resolution within ten (10) days after receipt thereof.

## **IX. DELAY IN PERFORMANCE**

As soon as the Army is aware of the potential for delay, it shall submit to the Division written documentation of the reasons for the delay and the efforts made by the Army to avoid the delay, as well as a time by which such work can be completed. The Division shall review the documentation and shall promptly approve the new schedule if good cause is shown. Good cause may include, but may not be limited to, extraordinary weather, natural disasters and national emergencies, justifiably unanticipated conditions during field activity, the Division's failure to take a particular action within a time period prescribed by this Consent Agreement for that action, and the pendency of dispute resolution. At a minimum, good cause does not include normal inclement weather, increases in the cost of work to be performed under this Consent Agreement, financial difficulty for the Army in performing such work, failure by the Army to satisfy its obligations under this Consent Agreement (whether evidenced by a notice of deficiency or not), acts or omissions of the Army's contractors or representatives not otherwise constituting good cause, and failure by the Army or its contractors or representatives to make complete and timely application for any required approval or permit. The burden of demonstrating good cause for delay, and that the delay proposed is warranted, is the Army's.

## **X. DISPUTE RESOLUTION**

If the Army wishes to dispute any decision of the Division made pursuant to this Consent Agreement or the RAP and the matter cannot be resolved through informal negotiations, it shall,

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within thirty (30) days of being notified of such decision, submit to the Division a written statement of the grounds for its dispute and of the decision it advocates. Within a reasonable period following its receipt of such a written statement, the Division shall issue a written decision on the disputed matter. Within thirty (30) days of receiving the Division's written decision on the dispute, the Army shall submit a written statement to the Division as to whether the Army shall abide by the decision. If the Division does not receive such a statement or the statement indicates that the Army shall not abide by the decision on the dispute, this Consent Agreement shall be deemed dissolved. In that event, the Division shall retain all its applicable enforcement right against the Army, and the Army shall retain all applicable defenses. The Army's invocation of dispute resolution shall not alone excuse noncompliance with this Consent Agreement or any requirement established pursuant thereto.

## **XI. ADDITIONAL PROVISIONS**

- A. All documents submitted to the Division pursuant to this Consent Agreement shall be sent by certified mail, return receipt requested, by Federal Express or other equivalent overnight service, or hand delivered to:

Nile Testerman  
Division of Waste Management, Superfund Section  
North Carolina Department of Environment and Natural Resources  
401 Oberlin Road-Suite 150  
Raleigh, NC 27605-1350  
The Division may be contacted at 919-733-2801.

The Division will direct all correspondence to:

Ms. Robin D. Mills  
Hampton BRAC Field Office  
Building 105A  
DAIM-BO-H  
Ft Monroe, VA 23651-5000

- B. This Consent Agreement shall be binding upon, and inure to the benefit of, the Army, its agents, successors and assigns. The signatory for the Army to this Consent Agreement certifies that he/she is authorized to execute and legally bind the Army as to this Consent Agreement.
- C. The Army shall provide a copy of this Consent Agreement to each contractor or other person or entity retained to perform any work under this Consent Agreement within seven (7) days after the effective date of this Consent Agreement or the date of retaining their services, whichever is later. The Army shall condition any such contracts upon satisfactory compliance with this Consent Agreement. Notwithstanding the terms of any contract, the



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Army is responsible for compliance with this Consent Agreement and for ensuring that such contractors or other persons or entities comply with this Consent Agreement. Submittal by the Army of each document pursuant to this Consent Agreement shall constitute certification by the signatory and by the Army of the truth, accuracy and completeness of the information contained in that document.

- D. This Consent Agreement notwithstanding, the Division retains all its authority regarding inactive hazardous substance or waste disposal sites in relation to the Site.
- E. In the event the Division determines the Army is in violation of this Consent Agreement or requirements established pursuant thereto, the Division may first consult with the Army on a remedy of the violation. If the Division determines that the violation persists, the Division may: order the Army to remedy the violation(s) or temporarily or permanently halt implementation of this Consent Agreement; conduct part or all of the remediation itself and seek cost recovery; and/or take any other action within the Division's enforcement authority regarding inactive hazardous substance or waste disposal sites.
- F. To protect the public health or the environment, the Division may order a temporary or permanent halt to implementation of this Consent Agreement, or order actions within its authority regarding inactive hazardous substance or waste disposal sites in addition to or other than those required hereunder.
- G. All actions required pursuant to this Consent Agreement shall be in accordance with applicable local, state and federal laws and regulations, unless an exemption regarding particular state or local laws or regulations is specifically provided in this Consent Agreement now or later. Based on the foregoing, the Parties intend that any remedial action selected, implemented, and completed under the Consent Agreement shall be deemed by the parties to be protective of human and public health and the environment such that remediation of releases covered by this Consent Agreement shall obviate the need for further corrective action under other applicable environmental laws and regulations.
- H. Neither the State of North Carolina nor any agency or representative thereof shall be held to be a party to any contract involving the Army relating to the Site.
- I. The Army shall preserve, for at least six (6) years after termination of this Consent Agreement, all records and documents which relate in any way to this Consent Agreement. After this six-year period, the Army shall notify the Division at least thirty (30) days prior to the destruction of any such records and documents. The Army shall comply with any written request by the Division, prior to the day set for destruction of the documents, to continue to preserve such records and documents or to provide them to the Division. The Army may assert any available right to keep particular records and documents, other than analytical data, confidential.

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- J. Nothing herein shall constitute a satisfaction of, or release from, liability for any claim arising as a result of operation, ownership or use of the Site by the Army, its agents, contractors, lessees, successors or assigns.
- K. This Consent Agreement may not be modified without the written consent of the Army and the Division.
- L. This Consent Agreement shall terminate when the Army receives written notice from the Division that all activities required pursuant to this Consent Agreement have been completed to the Division's satisfaction, except for the Army's obligation under Section XI.I .

### **XII. Public Comment**

This Consent Agreement shall be subject to a 30-day public comment period pursuant to N.C.G.S. 130A-310.4.

This Consent Agreement is entered into on the \_\_\_\_\_ day of \_\_\_\_\_ 200\_.

By:

Dexter R. Matthews, Director  
Division of Waste Management  
North Carolina Department of Environment and Natural Resources

By:

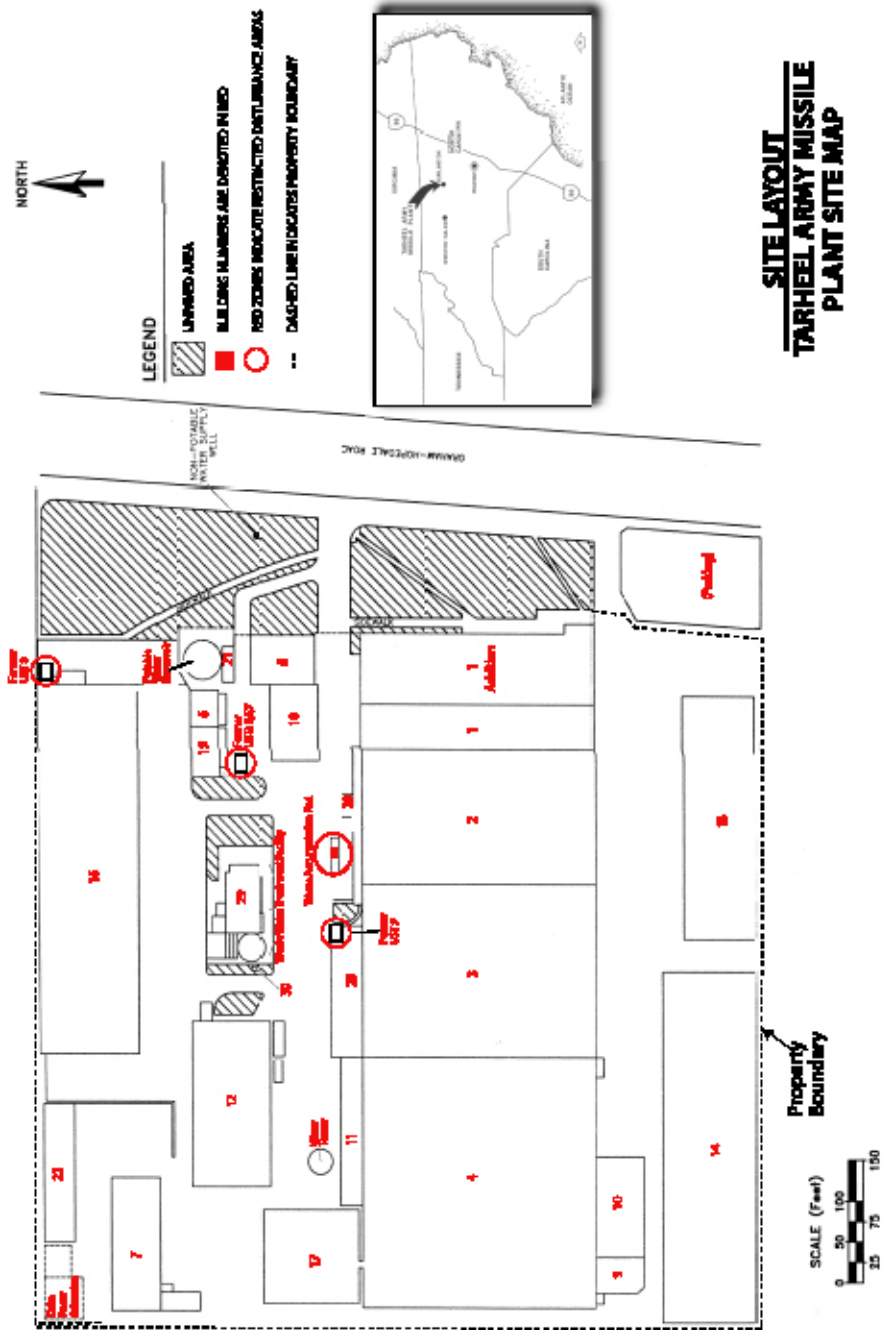
\_\_\_\_\_  
Raymond J. Fatz  
Deputy Assistant Secretary of the Army  
(Environment, Safety, and Occupational Health  
OASA (Installation and Environment)

#### **Enclosures:**

- A – Site Map
- B - Remedial Action Plan Outline
- C - Notice of Declaration Land Use Restrictions
- D – Revised Remedial Action Plan Requirements

## Exhibit A – Site Map

## Exhibit A – Site Map



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**Exhibit B – REMEDIAL ACTION PLAN OUTLINE**

Consent Agreement Activities and Milestones  
for the

**Tarheel Army Missile Plant  
Burlington, North Carolina**

Any terms used herein with meanings assigned to them in the Consent Agreement to which this is an exhibit shall have the meanings assigned in the Consent Agreement.

**Introduction**

**Statement of Objectives**

The goal of the Tarheel Army Missile Plant remedial action is to protect human health and the environment from the soil and groundwater contamination. This goal will be achieved by meeting the following specific objectives.

- The remediation of chlorinated solvent concentrations in soils will be completed when contaminant concentrations are reduced to the levels specified in the Lucent Corrective Action Plan (1994) or any less stringent alternative standards approved by the Division.
- The objective of the in situ remediation of groundwater will be to achieve a substantial reduction in chlorinated solvent concentrations in groundwater, defined as a 50 percent decrease in arithmetic average trichloroethylene (TCE) concentration, calculated allowing one-half the detection levels at the following monitoring wells: MW-104, MW-110, MW-111, MW-107, and MW-108. The preremediation average concentration is the average of the 2001 monitoring data (Weston, 2001 and Weston, 2002). The arithmetic average TCE concentration from the specified wells, calculated allowing one-half the detection levels, was 1072 ppb. The objective for the in situ remediation is to have the arithmetic average of the specified wells, calculated allowing one-half the detection levels, be less than 536 ppb within three years of the beginning of the full-scale in situ remediation.
- After the full-scale in situ remediation project is completed, the monitoring program will continue until chlorinated solvent concentrations in groundwater are reduced to the levels specified in 15A NCAC 2L .0202 or any less stringent alternative standards approved by the Division.

**Background**

Remedial Technology Screening

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- The Army will prepare a listing of candidate technologies and recommend the most viable technologies. The Division will approve the most viable for further evaluation.

### Data Needs

- Based on the existing data and the chosen technologies, the Army will identify what data, if any, are lacking to support those technologies, subject to the Division's approval.

### Evaluation of remedial alternatives

The Division will use the following criteria to evaluate the alternatives.

- Protection of human health and the environment, including attainment of remediation goals and endpoints.
- Compliance with applicable federal, state and local regulations.
- Long-term effectiveness and permanence.
- Reduction of toxicity, mobility and volume.
- Short-term effectiveness: effectiveness at minimizing the impact of the site remediation on the environment and the local community.
- Implementability: technical and logistical feasibility, including an estimate of time required for completion.
- Cost.
- Community acceptance.

### Action Plan

- The Army will present to the Division for its approval a detailed description of its preferred remedial alternative and a schedule for testing and implementation.
- The Army will include monitoring in any in situ remediation alternative it proposes.
- The Army will submit to the Division for its approval a long- term post-remedial sampling plan. This will include proposed locations for monitoring wells.

## Data Gathering and Remedial Design

### *Preparation of Work Plans*

The Army will prepare and submit the following plans to the Division. The activities in question may not be conducted until the Division approves the plan in question.

Health and Safety Plan for all anticipated site activities

Chemical Quality Assurance Plan for all anticipated sampling activities

Soil Sampling Workplan

Workplan for Implementation of Chosen Remedial Action Alternative, including a plan for a pilot test of the technology before full scale implementation.

Long Term Monitoring Workplan that details procedures for sampling

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### *Soil Sampling*

The SVE system has been operating since 1995. Soil sampling at the UST sites indicates that concentrations of most contaminants have been reduced below the target concentrations. The Army will sample the soils at the locations where the 1993 soils sampling data indicated contaminant concentrations that exceeded standards. There are twelve locations to be sampled. These will be sampled as close to the original horizontal location as is practical. A soil sample will be collected at every five feet of depth below the ground surface starting at five feet below existing ground. This soil sample will be screened using a handheld photoionization detector (PID). At each location, the sample with the highest PID reading will be sent to the laboratory for analysis. Soil samples will be analyzed for:

- tetrachloroethylene
- trichloroethylene
- dichloroethylene, all isomers
- vinyl chloride
- trichloroethane
- dichloroethane, all isomers
- benzene
- toluene
- ethyl benzene
- xylene
- total petroleum hydrocarbons

Sample collection and analysis will be performed in accordance with the work plan and using EPA-approved methods. The Army will prepare, and submit for Division approval, a report on the soil sampling procedures and results.

### *Pilot Test*

It is probable that the Division will require a pilot test of the remedial technology. The pilot test will probably be conducted on a small portion of the contaminated groundwater. Six months have been allocated for collection of data from the pilot test and generation of the report.

### *Start of Monitoring Program*

There is an intermittent stream directly downgradient from TAMP. During a site visit on July 17, 2002, during a drought, there was no flow in this stream, but pools of water remained. This indicates the stream bed is a discharge point for groundwater. The Army will select, for Division approval, three locations for groundwater monitoring.

The Army will install, subject to Division approval, three monitoring wells down-gradient at varying distances from TAMP.

The Army will sample the stream and monitoring wells semiannually concurrently with other required sampling. Provided that concentrations in these wells are stable for three years, sampling frequency will be reduced to annual.

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The Army will perform sample collection and analysis in accordance with the work plan and using EPA approved methods. Groundwater samples will be analyzed in a Division-approved chemical laboratory for:

- tetrachloroethylene
- trichloroethylene
- dichloroethylene, all isomers
- vinyl chloride
- dichloroethane, all isomers
- ethylene
- benzene
- toluene
- ethyl benzene
- xylene

Groundwater samples will be analyzed in the field using portable equipment for:

- pH
- dissolved oxygen
- electrical conductivity
- redox potential

Monitoring wells are sampled semiannually. Though the Army will remain responsible for all sampling, it may propose, subject to Division approval, a third party to perform the sampling.

The current groundwater monitoring program samples the following wells in April each year.

MW-2	MW-11
MW-102	MW-103
MW-104	MW-106
MW-107	MW-108
MW-109	MW-110
MW-111	MW-112
MW-113	MW-114
MW-115	MW-117
MW-118	

The following wells are sampled in October of each year.

MW-2	MW-104
MW-106	MW-107
MW-108	MW-110
MW-111	MW-112
MW-113	MW-114
MW-118	

Groundwater samples are analyzed for:

- volatile organic compounds by Method 8260
- chloride

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semivolatile organic compounds by Method 8270 (well MW-114 only)  
dissolved oxygen in field

### Full Scale Remediation

Assuming the pilot study confirms that the chosen remedial alternative will be effective in remediating groundwater at the TAMP, the Army will perform a full-scale remediation. It is estimated that the active remedial period will be 18 months. If the pilot study does not so confirm, the Army will submit another remedial alternative for approval by the Division or request termination of the corrective action based on technical impracticability from the Division and submit the necessary justification in accordance with 15A NCAC 2L .0106(m). If such request by the Army is refused, the Division may select a remedial alternative for implementation by the Army on the Division's schedule.

If the Division determines that the full-scale remediation has not met its objectives within five (5) years of the date on which this Consent Agreement is entered into, then the Division will notify the Army in writing of any additional remediation required. Within ninety (90) days of receiving such written notice, the Army shall submit to the Division two (2) copies of a revised RAP addressing all deficiencies noted by the Division. The required components of the revised RAP are outlined in Exhibit D.

### Long Term Monitoring

The Army will continue the monitoring program until RAP standards are met, unless the Division approves a less stringent alternative standard. The Army will prepare and submit annual reports of the monitoring. These annual reports will include an evaluation of the effectiveness of the remedial action including graphical and tabular analysis.

### **Schedule**

Activity	Milestone	Duration (days) or Date
1. Completion of Remedial Action Plan	Submit draft RAP	90 Days after Agreement is entered into
	Receive comments from Division	30 Days after submittal of report
	Submit final report	30 Days after receipt of comments
2. Data Gathering and Remedial Design	Draft health & safety (H&S) plan	90 Days after submittal of final RAP
	Receive comments from Division	30 Days after submittal of report
	Final H&S plan	15 days after receipt of comments



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	Draft chemical quality assurance (QA) plan	90 days after submittal of final RAP
	Receive comments from Division	30 days after submittal of report
	Final chemical QA plan	15 days after receipt of comments
	Draft remediation workplan	120 days after submittal of final RAP
	Receive comments from Division	30 days after submittal of report
	Final remediation workplan	30 days after receipt of comments
	Draft soil sampling workplan	60 days after submittal of final RAP
	Receive comments from Division	30 days after submittal of report
	Final soil sampling workplan	15 days after receipt of comments
	Draft long term monitoring plan	75 days after submittal of final RAP
	Receive comments from Division	30 days after submittal of report
	Final long term monitoring workplan	15 days after receipt of comments
	Report on soil sampling	112 days after submittal of final soil sampling workplan
	Finish pilot test of remedial technology	224 days after submittal of final remediation workplan
	Prepare report on pilot test	75 days after completion of pilot test
	First sampling, wells and stream	30 Days after installation of monitoring wells
3. Full Scale Remediation	Start	90 days after submittal of pilot test report
	End	548 days after start of full scale remediation
4. Long Term Monitoring	Annual sampling, wells and stream, and report	Within one week of effective date of the consent agreement or other mutually agreed upon date.

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### **EXHIBIT C – LAND USE RESTRICTIONS**

1. Any excavation, digging, drilling or other disturbance of the subsurface without the prior written approval of the Division of Waste Management (hereinafter “Division”) of the North Carolina Department of Environment and Natural Resources, or its successor in function, is prohibited except when:
  - a. the disturbance occurs outside of a ten (10)-foot radius surrounding the former underground storage tanks (UST- 5, 6, 7, 8 and 9) and waste accumulation pad, as indicated by the word “LAND DISTURBANCE PROHIBITED” on the plat recorded in plat cabinet \_\_\_\_ at the Alamance County Register of Deeds office, and
  - b. the total depth of the disturbance is at least five feet above the permanent high water table.
2. Disturbance of the environmental remediation equipment without the prior written approval of the Division or its successor in function is prohibited.
3. Removal or use of groundwater beneath the site without the prior written approval of the Division or its successor in function is prohibited.
4. Regardless of the current or future zoning, use of the property for residences, child-care services, schools or other child-related uses without the written approval of the Division or its successor in function is prohibited.

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### **EXHIBIT D – REVISED REMEDIAL ACTION PLAN REQUIREMENTS**

#### **General Provisions**

- A. The Army shall provide the Division with two (2) copies of the proposed Revised Remedial Action Plan (RRAP) for its review. The Army shall provide to the Division, if requested by the Division, the number of additional copies of the RRAP determined by the Division to be required for distribution to the local health director, register of deeds, and each public library in the county where the Site is located. The Division shall also mail notice of the RRAP to those who have requested notice that such plans have been developed, as provided in N.C.G.S. 130A-310.4(c)(2). The Division will not approve the RRAP until at least thirty (30) days after public notice was provided.
- B. Within thirty (30) days of receiving notice from the Division of any deficiency in the RRAP, the Army shall submit to the Division information or material sufficient to correct such deficiency.
- C. The Army shall begin implementation of the RRAP after receiving written approval from the Division but not later than sixty (60) days thereafter.
- D. Any requests for modifications of the approved RRAP must be submitted in writing to the Division, and may not be incorporated or implemented unless and until approved in writing by the Division.
- E. The Army shall provide to the Division quarterly reports during groundwater remedial action, any soil and waste remedial action, and any necessary post-remedial maintenance; and a final report with confirmatory sample data documenting complete implementation of the approved remedy. The quarterly reports and final report shall include, without limitation, complete as-built drawings and specifications of all remedial action systems; tabulated laboratory data; the location and depth of samples collected; a description of all field and laboratory quality control/quality assurance procedures; and legible and complete copies of all records of periodic system inspections, laboratory reports, waste manifests and chain of custody documentation generated during the reporting period. Quarterly reports shall be provided by the tenth day after each quarter concludes, with the first quarter commencing on the date of written approval of the RAP by the Division. The final report shall be provided within one (1) month following complete implementation of the approved remedy. The reports shall include a certification under oath by the Army official responsible for the Site stating: “To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this certification is true, accurate and complete.” If this document includes any work that would constitute the “practice of engineering” as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If this document includes any work that would constitute the “public practice of geology” as defined by N.C.G.S. 89E, the signature and seal of a licensed geologist is required.

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### **Required Sections**

The RAP will have the following sections:

1. A statement of objectives for the RRAP.
2. A listing of potentially applicable technologies.
3. An evaluation of remedial alternatives using the following feasibility study criteria.
  - a. Protection of human health and the environment, including attainment of remediation goals and endpoints.
  - b. Compliance with applicable federal, state and local regulations.
  - c. Long-term effectiveness and permanence.
  - d. Reduction of toxicity, mobility and volume.
  - e. Short-term effectiveness: effectiveness at minimizing the impact of the site remediation on the environment and the local community.
  - f. Implementability: technical and logistical feasibility, including an estimate of time required for completion.
  - g. Cost.
  - h. Community acceptance.
4. A detailed description of the Army's preferred remedial alternative for each contaminated medium, from among the alternatives evaluated, including an evaluation of potential impact to any sensitive environments identified on or near the Site and construction designs and specifications (any proposed treatment technology may require testing or bench-scale testing of Site waste to verify its effectiveness).
5. A description of all activities that are necessary to ensure that the proposed method(s) of remedial action is (are) implemented in compliance with applicable laws and regulations and that applicable cleanup standards are met. These activities include, but are not limited to, well installation and abandonment, sampling, run-on/run-off control, and discharge of treated waste streams.
6. The results of any treatability studies or site characterization work conducted in support of the proposed RRAP.
7. A description of any proposed treatability studies or additional Site characterization work needed to support the remedial design.
8. A description of methods of post-remedial and confirmatory sampling, and any necessary maintenance.

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9. A health and safety plan that conforms to OSHA requirements and assures that the health and safety of nearby residential and business communities will not be adversely affected by activities related to the remedial action.
10. Equipment and personnel decontamination procedures.
11. A proposed schedule for completion of remedial design, for remedial action construction and implementation, and for post-remedial and confirmatory sampling and reporting.
12. A certification under oath by the Contracting Officer of the Army responsible for the Site stating: "To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this certification is true, accurate and complete."
13. If this document includes any work that would constitute the "practice of engineering" as defined by N.C.G.S. 89C, the signature and seal of a professional engineer must be included. If this document includes any work that would constitute the "public practice of geology" as defined by N.C.G.S.89E, the signature and seal of a licensed geologist is required.